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THE FEASIBILITY OF ESTABLISHING A FEEDLOT FOR THE ORGANIZED STATE-WIDE FINISHING AND MARKETING OF INDIAN-PRODUCED CATTLE IN NEVADA

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I. INTRODUCTION

The 13 Indian reservations in Nevada with significant cattle and feed resources are relatively small in size and scattered throughout the state (see Figure 1). Cattle raising has been an important enterprise on all the reservations for many years but only 11 presently have Indian ranching operations. Sales consist primarily of calves and lightweight feeders. Alfalfa hay production and sales also have been important sources of income for several reservations and a small volume of grain is sold from a few of the reservations.

One of the problems experienced in attempting to stimulate economic development on the reservations has been the fact that their resources are individually small and scattered geographically. The Inter-Tribal Council of Nevada was organized to provide a vehicle for combining and coordinating these resources in a collective or cooperative effort to stimulate economic development. Similar development programs in other parts of the United States have met with greatest success where business enterprises developed have been compatible with the Indian culture.

Because the Nevada Indians are experienced cattle ranchers, but because the volume of cattle, hay, and grain produced on any one reservation is insufficient to justify individual development beyond present activities, the Inter-Tribal Council has chosen to explore the potential for a joint effort of all the tribes.

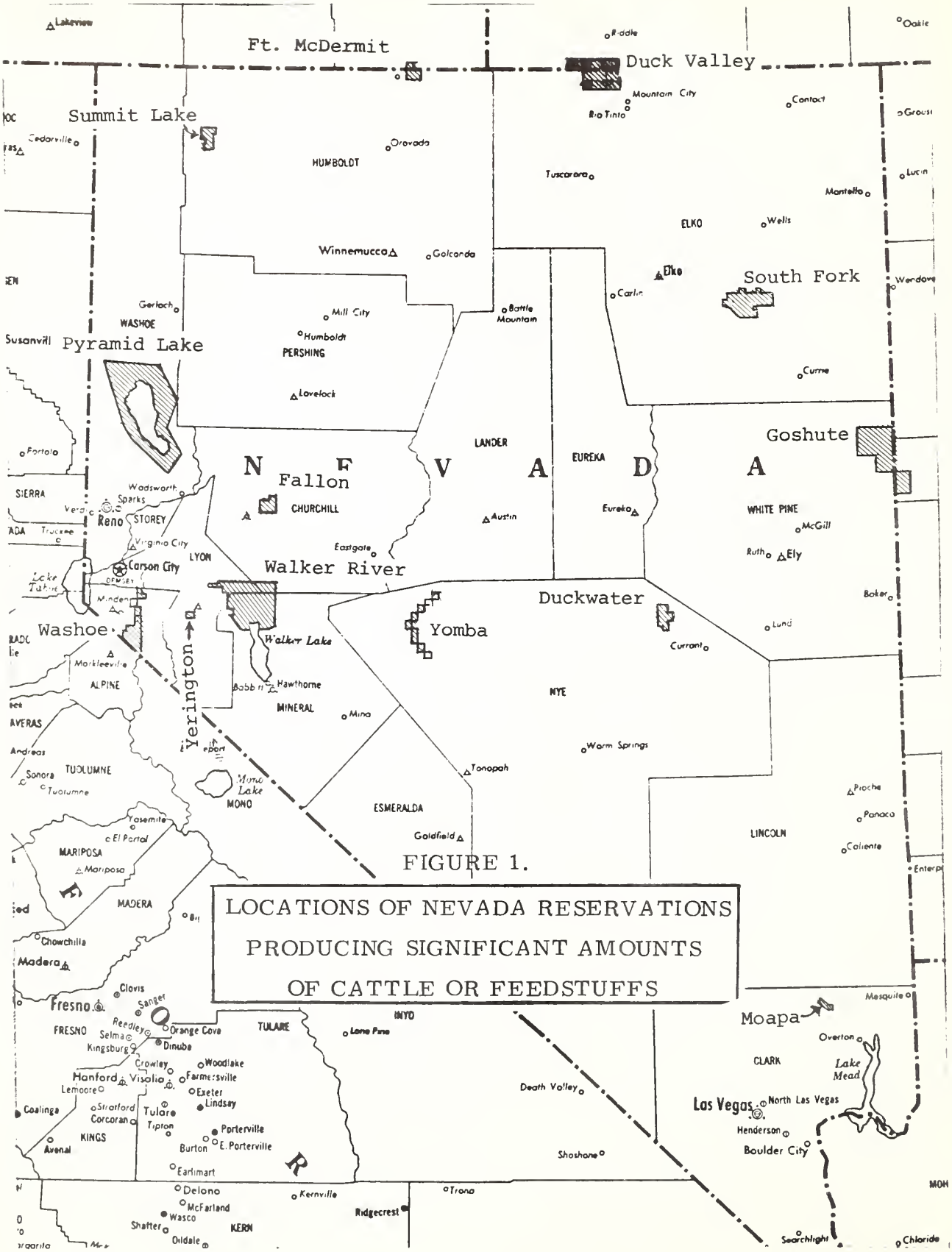


FIGURE 1.

LOCATIONS OF NEVADA RESERVATIONS PRODUCING SIGNIFICANT AMOUNTS OF CATTLE OR FEEDSTUFFS

II. OBJECTIVE AND SCOPE

The overall objective of the Inter-Tribal Council of Nevada is to increase Indian employment and income by assisting in the organization of scattered Indian resources into more effective operating units. Vertical coordination of the Indian livestock and farming operations is one way of organizing the Indian resources into economic units.

By adding value to the livestock already raised on the 11 reservations, the opportunity to capture profit margins of "middle men" such as feeders, processors, and marketing groups becomes available. It offers the opportunity to make greater use of Indian resources and to obtain a greater return for the input of these resources in an integrated system.

The general objective of this project is to evaluate the feasibility of integrating forward into the next stage or phase of the beef industry. The principal focus of this study is to determine the feasibility of a coordinated cattle feeding enterprise in Nevada to serve Indian cattle producers on 11 reservations.

Specific objectives of the project were to:

1. Determine the Indian cattle and feed resources that were available for a cattle feeding venture;
2. Determine a suitable site for a feedlot; and
3. Determine the feasibility of operating a feedlot based on the Indian resources.

In order to respond to these objectives, a study that was very broad in scope was required. It included reservation surveys and evaluation requiring over 5,000 miles of travel. The 11 reservations with cattle operations were visited. The study also included a feedlot site selection, an analysis of feedlot economics and management, and a preliminary organization/management plan for the feedlot. In addition, the relation of several activities peripheral to a feedlot venture were considered. Detailed analyses of other phases of a vertically integrated system such as meat packing and trucking are beyond the scope of this study and are treated only briefly in this report.

III. SUMMARY AND CONCLUSIONS

The United States beef industry is currently undergoing a major readjustment process. Rapidly rising feed prices during the last two years resulted in heavy losses for cattle feeders because fat cattle prices did not rise sufficiently to cover increased feed costs. This has led to several changes in the industry:

1. Excess feedlot capacity;
2. Reduction in backgrounding of calves;
3. Shorter feeding periods;
4. Reduced feeding of calves--feeders going into lots at heavier weights;
5. Lighter slaughter weights and lower grades;
6. More roughage feeding and less grain used; and
7. Ranchers are holding calves to heavier weights.

With many large feedlots failing and being sold for 50 percent or less than it cost to build them, and with uncertainty regarding the future of grain price, it is a difficult time to be exploring the feasibility of a feeding enterprise.

The 11 Nevada Indian reservations which currently have cattle enterprises produce approximately 6,500 calves and 1,300 yearlings each year. The reservations are scattered throughout the state and the size of ranching operations varies significantly from one reservation to another. Cattle production is not sufficiently great on any one reservation to justify a feedlot.

Ranching operations on all the reservations have been directed toward the production of calves in the past few decades. Regardless of whether or not a feedlot is built and regardless of any future changes in the beef industry, because calf crops are low, Indian cattlemen should change their ranching operations to sell yearlings instead of calves. After allowing for reduction in cow herds, this will increase the total pounds of saleable cattle 30 percent. Prices of yearlings and calves are expected to sell at nearly the same price over the next decade, thus ranching income will increase by shifting to the sale of yearlings. It is estimated that a shift to a cow-yearling operation from a cow-calf operation will result in at least $100,000 greater annual income for the Nevada Indians at present cattle prices.

By switching to a yearling operation, the 11 cattle producing reservations can produce enough feeders to operate a 2,200 head capacity feedlot, turning it three times a year. It is recognized that because not all the Indian-produced yearlings will necessarily be available for feeding in the proposed lot, and because of the seasonality of yearling production, outside sources of feeder cattle (both Indian and non-Indian) will have to be sought to operate the lot at capacity throughout the year.

Because the Fallon Reservation is centrally located with respect to the other reservations, and because there is enough surplus hay to supply

the total hay requirement of the feedlot only on the Fallon Reservation, it appears that this is the best site. The Walker River Reservation could provide an alternative site, but hay supplies are not adequate and added transportation cost would be incurred in moving hay to the feedlot.

The objective of integrating into a feeding enterprise is to capture margins now earned by middlemen-feeders and return them to Indian cattlemen. Thus, a cooperative form of organization is appropriate. The membership of the cooperative would be composed of Indian cattlemen from each of the reservations. The profits (if any) of the feedlot cooperative would be distributed to the members at the end of each year. The cooperative would employ three full-time men, in addition to the manager. The manager should have a minimum of five years experience in feedlot management and formal training in animal science. He should be hired under an irrevocable contract for three years beginning before construction.

The feedlot can be operated in one of two ways. The feedlot may purchase the feeders (yearlings) or may operate on a custom feeding basis. There are advantages and disadvantages associated with both methods. The primary advantage of purchasing feeders is that the cattleman gets paid for his yearlings immediately. This is believed to be very important to Indian cattlemen. The primary advantage of custom feeding is that operating capital requirements are reduced substantially (67 percent). About $350,000 per year in operating capital will be required for custom feeding whereas, if the feedlot owns the cattle, $850,000 a year will be required.

It will cost approximately $286,000 to construct the proposed 2,200 head feedlot of $130 per head of capacity. The estimated returns for the feedlot are low to negative over the range of the management results which are likely to be achieved when the lot is operated at 90 percent of capacity. One of the primary reasons for the low return is the high per head cost of building such a small feedlot. High operating costs also dominate a lot of this size.

While the overall objective of the Inter-Tribal Council is complete vertical integration in beef production, processing and marketing, it would be unwise to consider integration beyond the feeding enterprise until it has proved successful.

IV. CATTLE AND FEED SITUATION

In order to evaluate the potential for and feasibility of a coordinated cattle feeding enterprise, two very basic sets of information are required. First, the total number of calves and/or yearlings available for fattening in an Indian-owned feedlot had to be estimated. Second, the availability of any surplus feed for use in a new feedlot operation had to be determined.

Because this information is not published or readily available, it was necessary to conduct a survey of the reservations. The information and data developed during the survey are based on personal interviews with livestock association and other tribal members and not on actual livestock counts or tribal and association records.

A. Cattle Production

Table 1 shows an estimate of the number of operators, the number of cows, cows per operator, annual calf sales, and annual yearling sales on each reservation. It is emphasized again that these data represent the best judgment based on personal interviews. It was not possible to make an actual count of cattle numbers within the scope of this study and the limited records available reflected inconsistencies in data from one reservation to another. Some of the reservations include suckling calves in their count of cattle numbers. In other cases, only animals over six months of age are included in the count of cattle numbers. Furthermore, counts are taken at different times of the year on different reservations. In no case was it possible to estimate cattle numbers or sales by age, sex, or weight groups. Part of the problem experienced in making accurate estimates of cattle production is due to the management/organization structure under which cattle raising operations take place. While the livestock association on each reservation is primarily responsible for the management of the grazing land and cow herds, ownership of cattle is retained by individuals. This presents problems in management. Marketing of calves/yearlings/culls, etc is not the responsibility of the association but rather that of individual owners.

Despite the problems associated with making estimates of cattle numbers, the data reflect several important characteristics of cattle production.

1. The total size of the ranching operation varies significantly from one reservation to another. The largest operation, by far, is that of the Duck Valley Reservation in terms of the number of operators (79), the total size of the cow herd (4, 751), and total annual sales of calves (3, 201), and yearlings (356).

The average size of reservation cow herds (excluding Washoe and Summit Lake reservations) is 1, 145 head with average annual sales of 595 calves and 117 yearlings.

TABLE 1. CATTLE PRODUCTION ON THE 13 NEVADA INDIAN RESERVATIONS [a/]

Reservation	Number of Operators	Estimated Number of Cows	Cows Per Operator	Annual Calf Sales [b/] Number	Annual Calf Sales [b/] Average Weight (Pounds)	Annual Yearling Sales [b/] Number	Annual Yearling Sales [b/] Average Weight (Pounds)	Percent Calf Crop
Goshute	8	260	33	150	380	15	450	63
Duckwater	7	800	114	360	330	155	500	64
South Fork	18 [c/]	1,000	56	150	300	350	550	50
Duck Valley	79	4,751	60	3,201	400	356	500	75
Fort McDermit	37	1,107	30	540	400	60	685	54
Moapa	Corporation	50	50	--	--	25	1,000 [d/]	50
Pyramid Lake	24	1,300	54	585	350	65	550	50
Walker River	35	1,918	55	944	350	--	--	49
Yomba	8	500	63	275	350	25	550	60
Fallon	13	800	62	340	400	170	600	64
Yerington	4	116	29	--	--	75	600	64
Washoe	Range leased out			--	--	--	--	--
Summit Lake	Range leased out			--	--	--	--	--
TOTAL	234	12,602	53.35	6,545		1,296		62.2%

a/ Estimates based on personal interviews.

b/ Only calf and yearling sales are of importance to a potential feedlot. It is not generally economical to feed cull cows and bulls.

c/ Includes Odgers Ranch.

d/ Long yearlings maintained on irrigated pasture.

The smallest operation is that on the Yerington Reservation --4 operators, 116 cow herd, and annual sales of 75 yearlings.

2. The average number of cows per operator varies from a high of 114 on the Duckwater Reservation to a low of 29 on the Yerington Reservation.

3. The total number of calves and yearlings from current production available to a feedlot operation would be 7,841 head per year.

Sales from ranching operations have been primarily calves rather than yearlings. Currently, calves represent 83 percent of the number of head sold.

4. The relatively low average calf crop of 62 percent (Table 1) exhibits generally poor performance of ranching operations. On five reservations, the calf crop is in the 50 percent range. The highest calf crop (75 percent) is achieved on the Duck Valley Reservation but this is well below the Nevada state average of over 85 percent.

Several reasons can be cited for the poor performance, all of which are reflected in management performance. These include insufficient number and low quality bulls, ineffective pregnancy testing, poor culling practices, overstocking, the management/organization structure (tribal land ownership, association management of land and cattle but individual livestock ownership), and the need to adopt modern livestock production technology that is available.

Small scale ownership seems not to be a factor among the reservations because the smallest herds do not have the lowest percentage calf crop and the largest herds do not have the highest percentage calf crops. On the other hand, for the industry as a whole, a cow herd of 53 is relatively small.

B. Feeder Cattle Marketing

One of the problems experienced by the Indian cattleman has been in the marketing of his calves. Part of the problem stems from the fact that each producer markets his calves individually and in competition with one another rather than combining their marketing effort in a cooperative or joint marketing program. Individual producers often do not have sufficient market information and strong contacts with cattle buyers to judge market alternatives effectively.

During the reservation survey, a number of individuals interviewed suggested that Nevada Indians are cheated in the marketing of their products. It has been reported that Indian producers receive lower prices for cattle

and hay than non-Indian producers. While this is generally true, most objective observers would judge Indian cattle and feed to be of poorer quality than that of non-Indians. Whether or not the Indian producer is being cheated or prices received reflect the true quality of products marketed cannot be clearly determined by this study. It is clear, however, that at the present time, marketing is disorganized and less effective than it could be. This, in itself, may result in lower prices because it is more costly for buyers to make purchases from small unorganized sellers.

One of the benefits or advantages of integrating into cattle feeding is that a cooperative feedlot will offer an alternative market for feeders and some hay. A well qualified manager will be able to judge the quality of Indian-produced feeders and hay compared with non-Indian cattle and hay to determine if, in fact, there are quality differences. This alone is valuable information for the Indian cattlemen. If there are no differences in quality, the Indian can be assured of receiving competitive prices.

C. Feed Production

Eight reservations produce a surplus of hay over and above that required by current cattle raising operations. This is evidenced by annual hay sales of an estimated 12.6 thousand tons (Table 2). This is more than three times the quantity of hay needed to supply the requirements of the feeding enterprise proposed and discussed in greater detail in a later section of this report.

TABLE 2. ESTIMATED ANNUAL HAY SALES[a/]

Reservation	Tons	Reservation	Tons
Goshute	--	Walker River	3,100
Duckwater	450	Yomba	--
South Fork	700	Fallon	6,716
Duck Valley	--	Yerington	670
Fort McDermit	--	Washoe	300
Moapa	300	Summit Lake	--
Pyramid Lake	325		
		Total	12,561

a/ Based on personal interviews conducted during the reservation survey.

Other sources of feed are rangeland and some improved (irrigated) pasture. It was not possible within the scope of this study to conduct an in-depth investigation of the potential for increasing the carrying capacity of range and pasture land. However, from observations during the reservation

survey and from discussion with professional grazing specialists of the Bureau of Land Management, it was judged that grazing land on only three reservations appears to be understocked (Table 3).

TABLE 3. STOCKING CONDITIONS ON GRAZING LAND[a/]

Reservation	Condition	Reservation	Condition
Goshute	Understocked	Pyramid Lake	Overstocked
Duckwater	Normal	Walker River	Overstocked
South Fork	Normal	Yomba	Understocked
Duck Valley	Understocked	Fallon	No Grazing
Fort McDermit	Normal	Yerington	Normal
Moapa	No Grazing		

a/ Based on personal observation during reservation survey.

Three reservations are entirely irrigated: Moapa, Fallon, and Yerington. The Goshute, Duckwater, South Fork, Duck Valley and McDermit reservations possess only a limited amount of irrigated land.

The three reservations which appear to be understocked do not have the surplus hay to maintain a larger herd during the winter months. Those reservations with surplus hay could choose to supplement the range by feeding the hay to a larger cow herd instead of selling the hay as they now do. The wisdom of that decision, however, would be questionable in view of the poor performance shown by the low calf crop on reservations with surplus hay.

It is the general conclusion that cattle production can be increased only modestly, if at all, from current feed supplies without improved management practices or a change in the overall ranching operation. The management practices needing improvement are cited in Part A of this section. Assistance in establishing better practices is available from the Nevada Agricultural Extension Service. A change in the general ranching operation is suggested and analyzed in the next section.

V. RECOMMENDED CHANGE IN RANCHING OPERATION

The marketing of calves as opposed to yearlings from the reservation ranches is a pattern not unlike the rest of the cattle industry. During the past two decades prior to 1973, relatively low and stable feed grain prices encouraged the expansion of feedlot capacity in the United States and the production of choice and high choice fat cattle utilizing high levels of concentrates. In the last two years, United States feed grain surpluses have virtually disappeared into profitable export markets and feed prices have increased significantly. Needless to say, cattle feeders have experienced heavy losses during these last two years. The result has been the marketing of some grass or forage-fattened cattle, placement of cattle in feedlots at heavier weights, feeding for shorter periods, and marketing at lighter weights. Outside investors have all but disappeared from cattle feeding, and backgrounding has been reduced. As a result, the total number of cattle in feedlots has decreased substantially. It seems unlikely that long term feed grain prices will return to the low levels of the past two decades.

While feed prices remain high, the price of feeder cattle will stay relatively low with heavy feeders tending to sell at about the same price per pound or even above the price of calves. Under this situation, carrying calves to yearlings on the range produces more ranching income than selling calves even with the reduction in cow numbers that is required to prevent overstocking the range. Some ranchers have already begun to make this adjustment and did not sell calves in the fall of 1974. This is an adjustment that Indian producers will also have to make.

A. Recommendation and Implications

It is recommended that ranching operations on all the reservations be shifted to the sale of yearlings rather than calves. If a coordinated Indian-owned feeding enterprise becomes a reality, the feedlot simply will not be able to economically and profitably fatten calves to market weights on high-priced concentrates, unless calves are purchased from ranchers at severely depressed prices. The shift to sale of yearlings should be made even if an Indian-owned feeding enterprise does not come about. It is recognized that this recommended shift in production practices holds several important implications for the management of cow herds.

1. The first year, when the shift to yearlings is made, there will be reduced income from the sale of calves. While this will be partly offset by culling and sale of some cows, it may be necessary to seek some interim, outside financing for a short time. The cost of this financing and income lost the first year because of no calf sales will be made up by the greater income from sales of yearlings later.

2. Forage availability and quality of range land will be the principal determinants of the size yearling operation that can be supported. To the extent that range and forage are limiting factors, it will be necessary to reduce cow numbers in order to carry calves through to yearlings.

3. Animal nutrition must receive more attention in a yearling operation because instead of simple maintenance required in a calf operation, proper growth rations must be considered. This will require feeding some protein and energy supplements, a practice and cost not required in a cow-calf operation.

4. The wintering of calves will require a higher level of management and attention than for cows.

B. Analysis of Recommended Changes

An important factor in support of the recommendation to shift to a yearling operation is the low calf crop. Table 1 shows that the overall calf crop for the 11 reservations is about 62 percent. In other words, it takes 1.6 cows to produce one calf. With a cow rated at one animal unit and a yearling rated at 5/8 of an animal unit, it is possible to support more yearlings than cows on the same resources. This alone is of some advantage but when considered in conjunction with the prevailing low calf crop, a substantial benefit in terms of total saleable weight of cattle results when the switch to yearlings is made.

For example, a yearling is the result of a calf already produced and the resources required to maintain 1.6 cows will support 2.6 yearlings. Thus, by replacing some cows with yearlings, more total pounds of saleable cattle can be produced from the same resources.

In Table 4 the changes in output and the required decrease in the cow herd are summarized. It is estimated that there would be an increase in total production of about 694,000 pounds (22 percent). An estimated 2,895 cows (23 percent) will have to be sold from the 11 reservations in order for the present hay and range capacity to support a shift to all yearling production. No reduction in sales of hay will be required for this adjustment.

When yearlings sell at the same price as calves, the total revenue from Indian ranching activities would increase about $96,000 at a price of $0.26 per pound and $158,000 at a price of $0.35 per pound (Table 5).

When yearlings are selling for $0.03 per pound more than calves, the revenue from the cow-yearling operation is from $200,000 to $300,000 greater than the cow-calf operation. For Indian ranches with a calf crop percentage near (or below) that estimated in this study, a cow-yearling operation is more profitable than a cow-calf operation, even when yearlings

TABLE 4. ADJUSTMENTS IN RESERVATION RANCHING AS A RESULT OF SHIFTING FROM CALF TO ALL-YEARLING PRODUCTION

Reservation	Yearling Production			Total Potential Yearling Production [b]	Total Present Weight of Calves and Yearlings [c]	Cows on Reservation After Adjustment to Yearlings [d]	Cows To Be Sold
	Current	Additional Capacity [a] In Yearlings	Total				
				(Pounds)			
Goshute	15	108	123	79,950	63,750	194	66
Duckwater	155	258	413	268,450	196,300	644	156
South Fork	350	114	464	301,600	237,500	928	72
Duck Valley	356	2,183	2,539	1,650,350	1,458,400	3,377	1,374
Fort McDermit	60	406	466	302,900	257,100	862	245
Moapa	25	--	25	16,250	25,000	50	--
Pyramid Lake	65	448	513	333,450	240,500	1,046	254
Walker River	--	732	732	475,800	330,400	1,464	454
Yomba	25	205	230	149,500	110,000	382	118
Fallon	170	243	413	268,450	238,000	644	156
Yerington	75	--	75	48,750	45,000	116	--
TOTAL	1,296	4,697	5,993	3,895,450	3,201,950	9,707	2,895

a/ Based on volume of current calf production, percent calf crop, and adjustments in herd required to sell all yearlings. See Appendix Table 1.

b/ At 650 pounds per head.

c/ Based on estimates in Table 1.

d/ Yearling production times cows kept per calf produced (From Column B, Table A-1).

TABLE 5. ESTIMATED TOTAL INCREASE IN REVENUE FOR ELEVEN RESERVATIONS AS A RESULT OF SHIFTING TO YEARLING PRODUCTION -- VARIOUS CALF AND YEARLING PRICES [a]

Calf Price	Yearling Price dollars per pound						
	0.26	0.29	0.32	0.35	0.38	0.41	0.44
dollars per pound	dollars						
0.23	191,822	----	----	----	----	----	----
0.26	95,764	212,628	329,491	----	----	----	----
0.29	(295)[d]	116,569	233,432	350,296	----	----	----
0.32	(96,353)	20,511	137,374	254,230	----	----	----
0.35	----	(75,548)	41,315	158,179	275,042	----	----
0.38	----	----	(54,743)	62,121	178,984	295,848	412,711
0.41	----	----	----	(33,938)	82,925	199,789	316,652
0.44	----	----	----	----	(13,133)	103,731	220,598
0.47	----	----	----	----	----	7,672	124,535

a/ [Price of yearlings x 3,895,450[b]] - supplemental feed cost[c] - [price of calves x 3,201,950[b]]. The change in revenue as a result of a switch to yearlings would affect each ranch differently depending on volume of production and calving percentage.

b/ Estimated production, see Table 4.

c/ Supplemental feed cost is estimated at $18 per head of yearlings wintered for a total of $84,546.

d/ Numbers in parentheses denote decreases in revenue.

sell for $0.02 to $0.03 per pound less than calves.

A brief example can further demonstrate the financial implications of the change to a cow-yearling type of ranching operation. Since the total number of calves to hold over to yearling age will need to be less than the present calf crop, some calves will be sold in addition to the substantial number of cows during the year in which the change is made. A summary of sales under the present ranching system and sales projected during the year of transition to a cow-yearling operation is outlined below. Prices prevailing in February 1975 are used in the projection.

Present total calf and yearling sales:	
3,201,950 pounds @ $0.26 per pound =	$832,507
Projected sales during change in operation:	
2,895 cows (in addition to normal culling), 950 pounds each @ $0.19 per pound=	522,548
1,848 calves[1/], 380 pounds each @ $0.26 per pound =	182,582
Total	$705,120

The difference between the two levels of sales will presumably need to be financed. This amount is estimated at about $127,000. By adding the estimated supplemental feed costs of $84,546 for wintering calves, the total amount to be borrowed will be about $212,000. Based on the total number of cows projected to be on the reservation after the change in type of operation (9,707), the financing needed would be under $22 per cow. This is only $1,000 to $2,000 for the typical Indian cow herd owner and would be available to most ranchers from FmHA or other sources of production financing.

While the change appears to be very dramatic on the surface, it does not generate a large financial burden if the cows are culled in the proper number and about 25 to 30 percent of calves are also sold.

1/ The present sales of 7,841 head of calves and yearlings less 5,993 head of yearlings expected to be sold under an all cow-yearling ranching operation.

VI. FEEDLOT LOCATION

A. The Nevada Cattle Industry

The Nevada livestock industry is relatively small, producing on the order of 300,000 head of feeder cattle annually. About one-third of these are fed out locally to slaughter weights making Nevada a net exporter of feeder cattle.

The cattle feeding industry has become concentrated in west central Nevada to take advantage of available feed supplies and favorable weather; however, most of the grain is imported from states to the north and east. The climate in this area is dry and mild throughout most of the year with relatively light winds and moderate winter snowfalls. This area of the state produces substantial quantities of high quality alfalfa hay, much of which is shipped to California.

Only three feedlots market over 5,000 head of fat cattle annually:

1. Nevada Nile at Lovelock - Capacity of 15,000 head
2. Nevada Cattle Feeding Yard at Fallon - Capacity of 12,000
3. Ed Snyder at Yerington - Capacity of 5,000

Assuming a turnover rate of twice a year, these three feedlots are capable of feeding more than 60 percent of the fat cattle marketed in Nevada annually. In addition to these three lots, the Peoples Packing Company feeds several thousand head a year and the remainder of the state's feedlot capacity is made up of scattered, small units. Many of the smaller feedlots have engaged primarily in backgrounding operations during the period of low feed grain prices.

B. Feedlot Site

It is apparent from the way in which the Nevada cattle feeding industry has evolved that the logical place for a new Indian-owned feedlot is the west central part of the state. Several factors were given consideration in the process of site selection. These included:

a. Feedstuffs availability;
b. Centrality with respect to the reservations;
c. Proximity to other feedlots, therefore the fat cattle market;
d. Adequate supply of good quality water;
e. Access to highway transportation and power supply;
f. Pollution potential, drainage, and other environmental considerations; and
g. The extent of local Indian preparedness to support a new activity.

Of primary importance is the availability of feed supplies. Especially important is the availability of alfalfa hay because it represents 40 percent of the feeding ration and because it is very costly to transport a bulky, low value commodity such as hay. Five of the reservations (Pyramid Lake, Washoe, Yerington, Walker River, and Fallon) lie in what has been referred to as west central Nevada, and two, Walker River and Fallon, were given serious consideration as a feedlot site. The other three did not have large quantities of hay available. Walker River has an adequate level of hay production to meet the needs of a small feedlot, but could not support any growth of feeding beyond the initial size lot suggested here. Further irrigation development to produce more hay at Walker River would present serious problems. If additional water would be drawn from the river for irrigation, the rate of decline of Walker Lake would increase and the drainage to the lake would be more saline. Walker Lake is a sport fishing area already faced with a decline of one foot per year.

The Fallon Reservation is the better choice of location. More than enough surplus hay is currently produced on the Fallon Reservation to meet the requirements of the proposed feedlot, thus eliminating the need (and associated cost) of importing hay. Fallon is centrally located with respect to the other reservations. It is well located with respect to fat cattle markets. It is accessible to both north-south and east-west highways, adequate supplies of good quality water, and a power supply. Drainage, pollution, and other environmental problems do not offer obstacles for construction and operation of a feedlot on the Fallon Reservation.

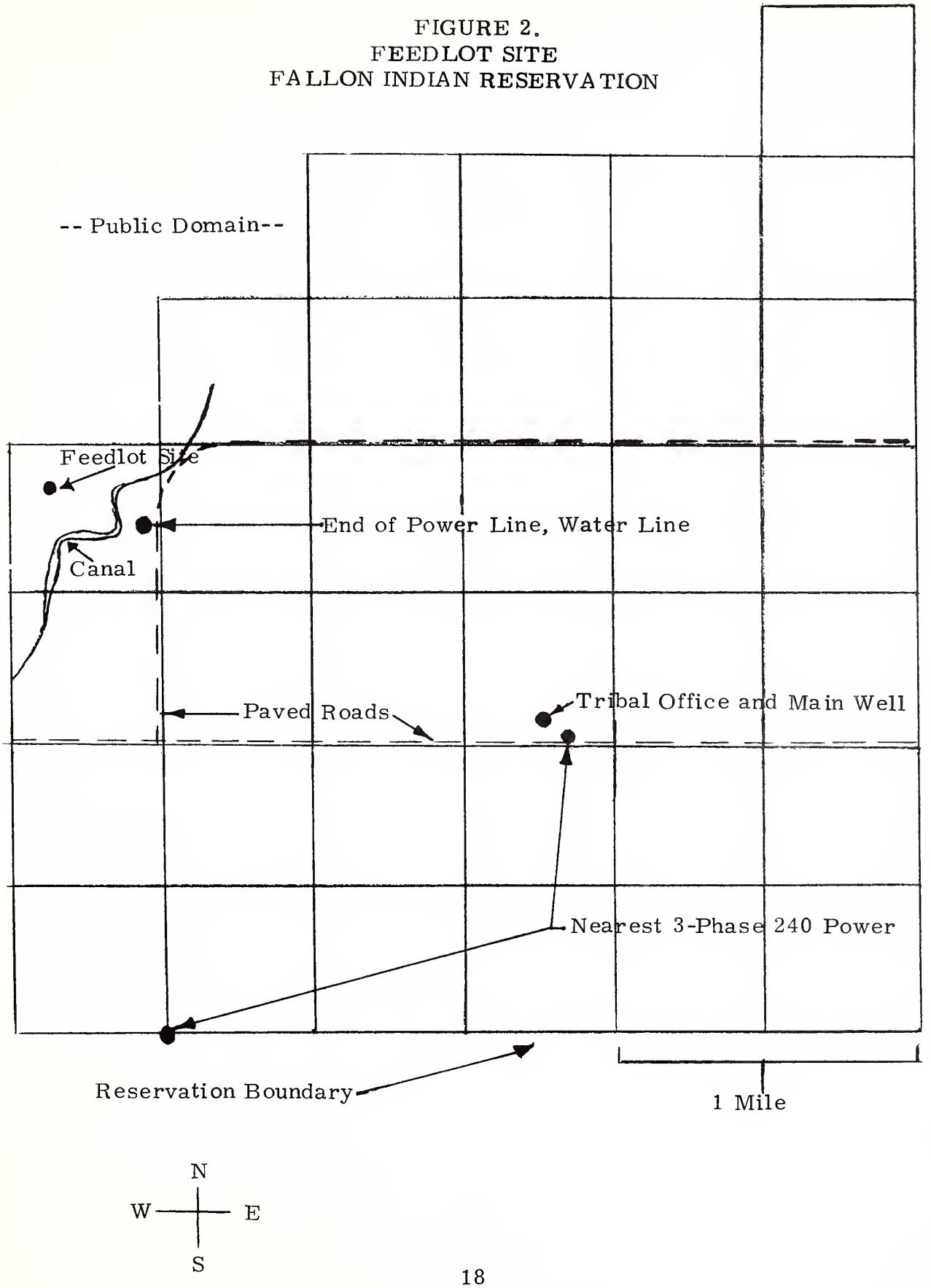
Figure 2 shows a suitable site in the northwest corner of the Fallon Reservation. This triangular shaped 20-acre parcel is currently unused tribal land. It is bordered on the north and west by desert (public domain) and on the east and south by an irrigation canal. An all-weather road will have to be brought into the site along the north side or directly over the canal on a bridge. Little will be required in the way of land clearing and leveling to prepare the site. The soil is sandy loam; the vegetation, desert brush. Two low hills running east and west will require minor shaping to achieve adequate drainage away from the pens. The water is only 14 feet below the lowest ground but present wells in the same area are too salty for use. This will necessitate extending the nearest water line about one-quarter mile and providing some water storage at the site. Electric power and telephone would also have to be extended to the site. Three phase, 240 volt power is available at the main well.

C. Environmental Considerations[2/]

The Fallon Reservation site should present little or no pollution

2/ See the Bibliography for a specialized reference used by this study as a guide in adequately allowing for environmental concerns.

FIGURE 2.
FEEDLOT SITE
FALLON INDIAN RESERVATION



pollution control or other environmental problems. The annual seven-inch rainfall combined with the sandy loam soil precludes any problem from run-off. Land contouring and a drainage basin to the west are further planned precautions. Pollution of underground water is unlikely and of no consequence since it is already unusable.

Manure from the lot will be accumulated and temporarily piled in the pens and removed periodically for application to nearby irrigated fields. Manure is an excellent fertilizer for typical desert soils which are low in organic matter.

The nearest homes are scattered to the south and east with none closer than one quarter mile. Odor and dust from this size facility will not reach the City of Fallon, which is at least five miles away (Figure 3).

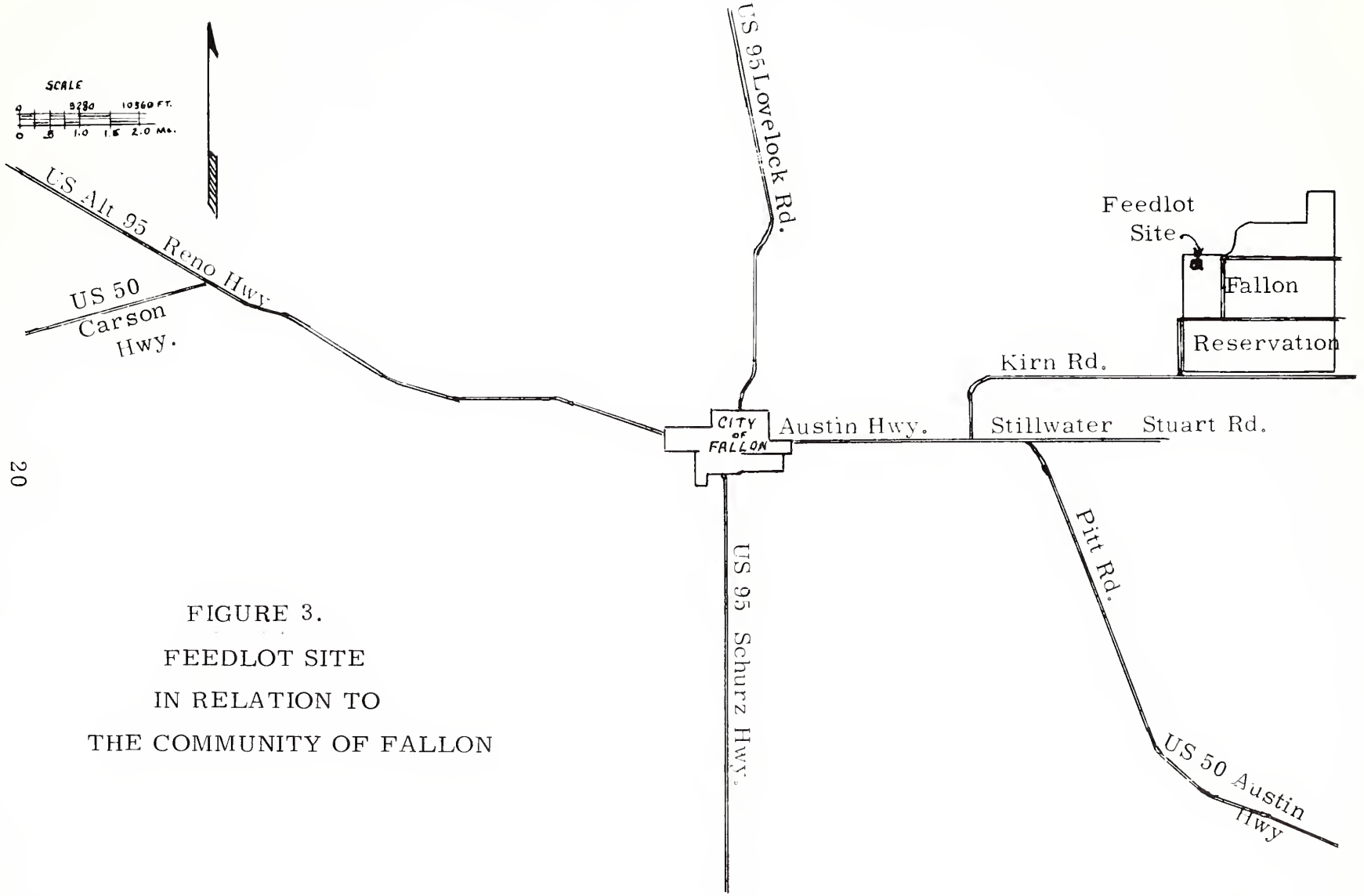


FIGURE 3.
FEEDLOT SITE
IN RELATION TO
THE COMMUNITY OF FALLON

VII. SIZE AND LAYOUT FOR THE PROPOSED FEEDLOT

Because this project was undertaken to determine the potential benefits to Nevada Indians from vertically integrating into a cattle feeding enterprise, the primary determinant of size for a feedlot must be the number of cattle produced on the 11 Nevada Indian reservations. Table 4 in Section V of this report shows that a yearling operation on all the reservations will yield a total of 5,993 yearling feeders per year, applying the same resources now used to produce 7,841 calves and yearlings. While fewer head of cattle are produced in a yearling operation, 22 percent more animal weight is produced.

Based on a 120-day feeding period to put on 275 pounds of gain (650 pound yearling to 925 pound finished animal) or a planned turnover of lot capacity of three times per year, it will be necessary to accommodate about 2,000 head in the lot at any one time to feed out all the Nevada Indian-produced yearlings. In order to do this, from a practical standpoint, the actual capacity of the feedlot should be about 10 percent greater. This is to allow for timely cleaning of pens and the flexibility to start short lots at particular times and to allow some flexibility in procurement of feeders and sale of fat cattle. Thus, it is proposed that a feedlot of 2,200 head capacity be considered for this project. It is on this basis that capital investment costs and associated operating costs are estimated. Figures 4 and 5 show a suggested layout for such a facility.

While the size of the feedlot had to be sufficient to serve Indian-produced cattle from the 11 reservations, it was recognized that almost all of these cattle are now marketed in the fall of the year. By switching to a yearling operation and improved planning and management, it is not unrealistic to suggest or expect that marketings can be programmed for spring and fall. Furthermore, it is recognized that not necessarily all of the yearlings produced on the Nevada Indian reservations will be fattened in the proposed feedlot. Thus, it should be anticipated that in order to operate the feedlot at or near capacity, probably at least one third of the feeders (yearlings) will have to come from sources other than the Nevada Indian reservations. These other sources might include other Indian reservations such as the Apache San Carlos Reservation in Arizona (they hold a spring sale) or purchased feeders from non-Indian sources.

FIGURE 4.

SCHEMATIC LAYOUT OF FEED MILL AND STOCK HANDLING FACILITIES

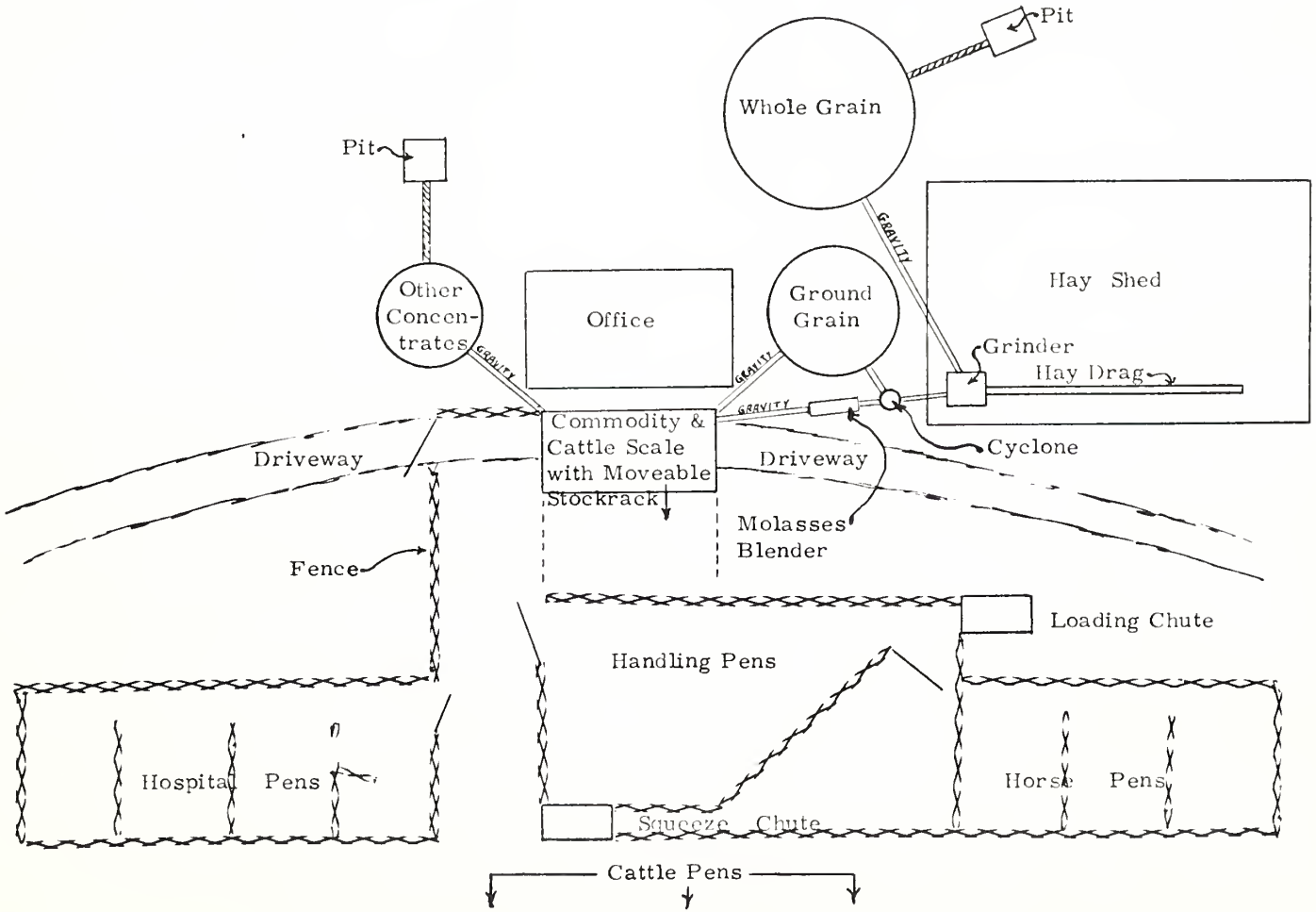
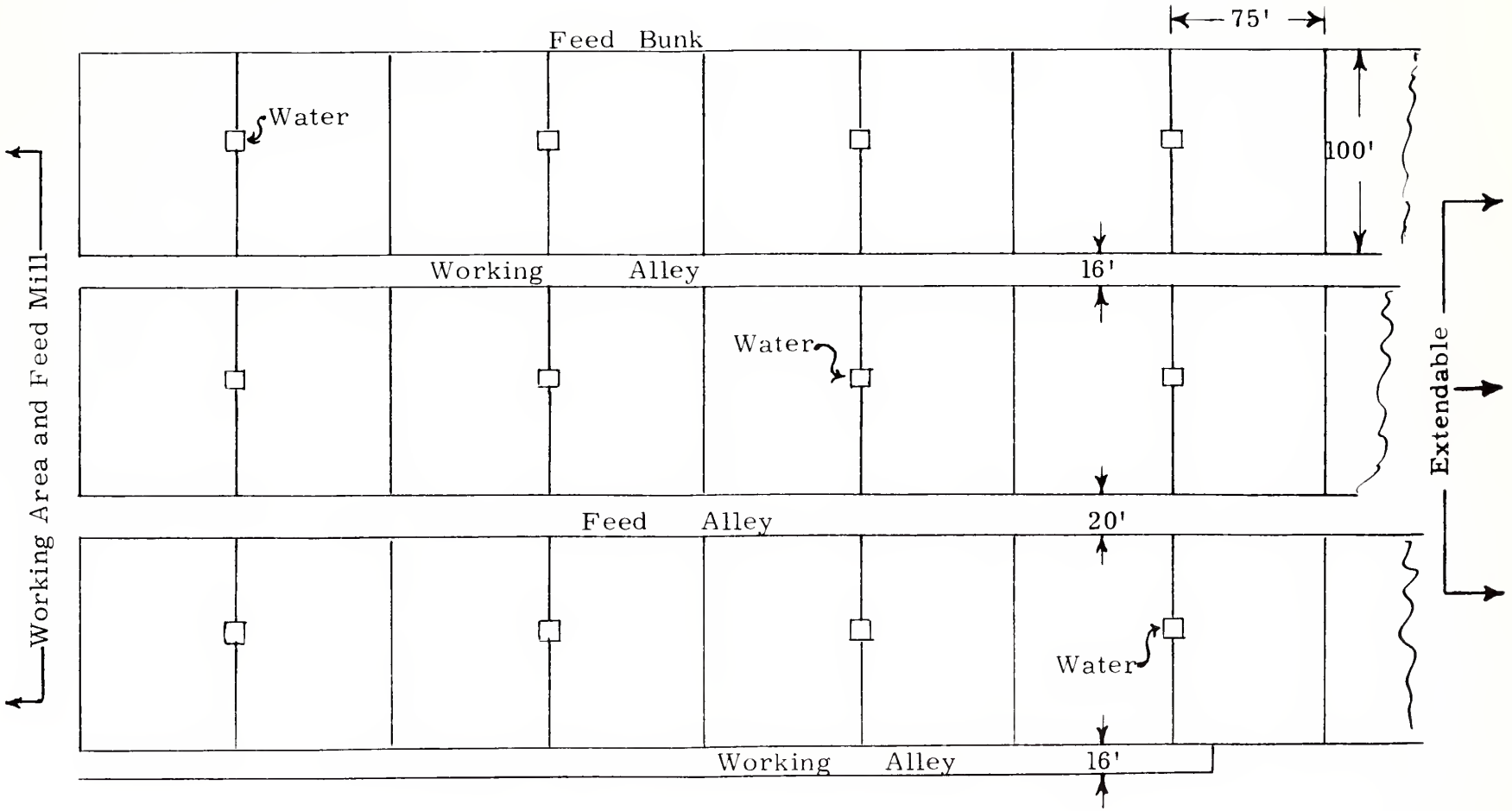


FIGURE 5.

CATTLE PEN LAYOUT



VIII. ORGANIZATION/MANAGEMENT/EMPLOYMENT

A. Organization

The overall objective of the Inter-Tribal Council is to improve the economic returns to the Nevada Indian cattleman through vertical integration in the beef industry. Vertical integration, in turn, will offer additional benefits such as employment opportunities, an alternative market for feeder cattle and surplus hay, and, in general, the opportunity to keep more productive activities in Indian hands.

A coordinated cattle feeding enterprise is proposed principally for the benefit of the Indian cattleman. Thus, it seems reasonable that the enterprise be organized so that returns from the feedlot can be equitably distributed back to the cattleman. This suggests a cooperative form of organization. Thousands of cooperatives have been organized over the years in the United States to accomplish these very same objectives (benefit to the members) whether the business enterprise is cattle feeding, production of feeder pigs, grain marketing, meat packing, farm input procurement, cheese manufacturing, or soybean processing. The detailed procedure and legal documents required for organization of a cooperative can be found in several publications of the Farmer Cooperative Service (USDA).

1. Organizing a Farmer Cooperative, FCS Circular 18, Farmer Cooperative Service, USDA, Washington DC, November 1956.

2. Legal Phases of Farmer Cooperatives, FCS Bulletin 10, Farmer Cooperative Service, USDA, Washington DC, January 1958.

3. Legal Phases of Farmer Cooperatives - Sample Legal Documents, FCS Information 66, Farmer Cooperative Service, USDA, Washington DC, May 1970.

4. Farmer Cooperatives-Farm Business Tools, Agricultural Information Bulletin 275, Farmer Cooperative Service, USDA, Washington DC, January 1964.

5. How to Start a Cooperative, Educational Circular 18, Farmer Cooperative Service, USDA, Washington DC.

Assistance may also be sought directly from the Farmer Cooperative Service or land grant universities (University of Nevada) in organizing a new cooperative.

Traditionally, when a group of producers organize to form a cooperative, the members raise part of the capital to provide an equity in the enterprise and then seek sources of debt capital such as the Bank for Cooperatives, commercial banks, insurance companies, etc. The membership of this cooperative cattle feeding enterprise will be either the various reservation groups or the individual Indian cattlemen. In this case there is another potential source of capital funds for the cooperative. Application can be made to the Economic Development Administration for funds to construct the feedlot and provide some of the initial operating capital requirements. If such a grant can be obtained, the traditional problem of raising equity capital from the members can be alleviated as well as the problem of seeking sources of debt financing (a particular problem in times of tight money and high interest rates).

Requirements for membership in cooperatives vary. An obvious requirement is that an individual cannot be a member unless he does business with or uses the cooperative. In this case, unless an individual cattleman ships his yearlings to the cooperative feedlot, he cannot be a member. Some cooperatives also require that members make an investment. The investment may be nominal or substantial. Another membership requirement of most farmer cooperatives is that the member actually be a farmer or in this case members would have to be cattle producers or ranchers and actually engaged in raising feeder cattle (yearlings).

This feedlot is proposed solely for the benefit of Nevada Indians and specifically for the benefit of Indian cattle producers and efficient feeding operations require that the lot operate as close to capacity as possible. This points clearly to the very first step that should be taken in organizing the feeding cooperative. A relatively small (six to eight) organizing committee of interested producers should be formed with one principal objective in mind -- to determine how many other producers would be interested in the cooperative and the extent to which each would use the cooperative to fatten his cattle. During the reservation survey the principal investigator was able to gain some indication of interest in the feeding enterprise.

TABLE 6. APPARENT INTEREST IN FEEDLOT

Reservation	Interest	Reservation	Interest
Goshute	Strong	Pyramid Lake	Strong
Duckwater	Some	Walker River	Strong
South Fork	Strong	Yomba	Strong
Duck Valley	Weak	Fallon	Strong
Fort McDermit	Some	Yerington	Strong
Moapa	Some	Washoe	Some

It appears that the reservation with the greatest number of cattle has the least interest. If there is insufficient interest on the part of Indian producers to generate enough yearlings to operate the feedlot at an efficient level, there is no point in organizing the cooperative and building the feedlot.

Assuming there is sufficient interest in organizing the cattle feeding cooperative, the members would elect a board of directors. The board of directors would, in turn, be responsible for hiring a manager for the cooperative. The manager, under the direction of the board of directors, is responsible for the business operations of the cooperative, including hiring and firing of employees, purchasing, marketing, and handling of all products and supplies. After subtracting costs, each year, the profits (if any) are distributed to cooperative members in the form of patronage refunds according to the volume of business each member does with the cooperative. By law, at least 20 percent of the patronage refund must be paid in cash in the year it was declared. Payment of up to 80 percent of the patronage refund may be deferred to some future year. This ability to defer paying of patronage into the future has been a vital source of capital funds for many cooperatives. To be fair, it should be pointed out that many cooperatives have also found it difficult or impossible to pay these deferred patronage refunds when they come due, in which case they are usually deferred for payment at some date in the future.

Once the cooperative has been formed and a financial commitment for construction and operating has been received, the subsequent steps in establishing the feedlot and approximate timetable are as follows (also see Table A-5):

		Month
1.	Hire the manager.	1
2.	Obtain lease or assignment of rights from the Fallon Reservation to the cooperative.	1
3.	Develop detailed working design of the feedlot.	2-4
4.	Site preparation and installation of utilities.	5
5.	Construction.	6-12
6.	Purchase equipment.	10
7.	Hire labor.	11
8.	Make arrangements with tribal office or individual farmers for the hauling and disposal of manure as fertilizer on adjacent irrigated land.	11
9.	Begin operating.	13

B. Management

Topnotch management will be the key to successful operation of the proposed feedlot. Management in cattle feeding is more important today than it has been in the last two decades. The manager hired for this feedlot should have a minimum of five years experience in all phases of a

feedlot operation, including buying of feeder cattle, feed ingredient purchasing, and the selling of fat cattle. The manager should have a college degree in Animal Science (or its equivalent in formal education). To assure successful initiation of the operation, the manager should be hired before the feedlot is constructed and should be involved in the planning and construction of the lot. To assure continuity in the first several years of operation, the manager should be hired under an irrevocable contract for three years. The manager must have complete control of the operations during these three years in order to act in the best business interests of the cooperative (within, of course, the general operating policies set by the board of directors).

Because the objectives of this enterprise are to make better use of Indian resources and provide additional employment opportunities for Indians, and because it will be important to establish good rapport with cooperative members, the manager of the feedlot should eventually be Indian. If an Indian with the qualifications listed above cannot be located initially, an Indian counterpart should be assigned to the feedlot manager to learn the business. In this event, the manager hired would be responsible, during his three-year contract, for training his counterpart, and at the end of the three years, the Indian counterpart can take over management of the feedlot.

C. Employment

It is estimated that, in addition to the manager, three other employees will be required to operate the feedlot at capacity. In a small feedlot such as this, each employee must be expected to perform a variety of jobs. Cattle feeding is much more sophisticated than ranching operations. Poor performance shows up more quickly and has a greater impact on the operation. A variety of skills will be required, including:

1. Receiving incoming cattle;
2. Weighing cattle;
3. Regular observation to detect sick cattle;
4. Treating sick cattle;
5. Inoculation of cattle;
6. Processing and mixing of rations;
7. Equipment operation--hay and grain grinding;
8. Delivery of feed to the pens;
9. Cleaning pens and manure disposal;
10. Record keeping; and
11. Equipment and facility maintenance.

Indians should, of course, be hired for these positions and if not experienced in cattle feeding operations, the manager will be responsible for training these employees. A part-time bookkeeper also will be required, but this is a job for an outside experienced professional.

IX. FEEDLOT OPERATION

There are basically two ways in which the feedlot can operate.

1. The feedlot can purchase feeders (yearlings) from Indian cattlemen, feed them out, and then sell them. Returns over all costs would be distributed (in cash and deferred patronage) to the cattlemen who sold their yearlings to the feedlot if they are members of the cooperative. Under this method of operation there is one very important operating policy that must be established--that is, the arrangement for purchasing feeders and the price to be paid. Farmers who organize cooperatives of this nature often are under the mistaken impression that because they own their own enterprise, a feedlot in this case, the cooperative can or should somehow pay a premium price for feeders (in this case) going into the lot.

Cattle feeding is a highly competitive business. Whether the feedlot makes money depends on three things:

a. Price paid for feeders;
b. Cost per pound of gain; and
c. Selling price of the finished animal.

To pay a premium for feeders is a very dangerous business practice because if too much is paid, the feedlot will continually lose money. This makes it difficult to judge the true performance of the cooperative.

Under this method of operation, one of two procedures should be followed:

a. Pay the competitive market price for feeders; or
b. Pay a percentage of the competitive market price for feeders.

Because of market uncertainties, the second method is often used by cooperatives because the profits are returned to the members at the end of the year anyway. This method also alleviates working capital requirements to some degree.

2. The second basic method of operating the feedlot is to feed cattle on a custom basis. Under this arrangement, the Indian cattlemen would maintain ownership of the feeder and would pay a fee to have them fed in the lot. There are a variety of methods for determining the fee to be charged but regardless of the method, the fee will cover all feed and non-feed costs plus a profit margin of some kind. There are several advantages to operating on a custom basis:

a. It alleviates the problem of determining what to pay for feeders.
b. It substantially reduces working capital requirements.
c. It reduces the risk for the feedlot of price fluctuation in cattle markets.
d. It allows the cattleman to maintain ownership of the cattle.

Any profits from a custom feeding operation would, of course, be distributed to the members of the cooperative.

These two methods of operation both have advantages and disadvantages and one method may fit Indian customs better than the other. It would be presumptuous to recommend one or the other method at this time.

A. Rations

The decision on rations to be fed will be made by the feedlot manager and will depend on the availability and prices of ingredients. The ration will change as fattening progresses and may change from month-to-month, depending on availability and prices of ingredients. Locally available ingredients and by-product feeds should be used to the greatest extent possible. There is sufficient high quality alfalfa hay produced on the Fallon Reservation to meet the roughage requirements for the feedlot. Locally produced barley, wheat, and corn silage should be used when available but it should be recognized that at least half of the grain will have to be imported from other states. By-products such as molasses, almond hulls, beet pulp, potato skins, and apple pumice should be taken advantage of when available. Protein supplements and micro ingredients must be imported.

For the purposes of estimating feedstuff requirements for this study, an average 40 percent roughage (alfalfa hay), 60 percent concentrate ration has been used, assuming that:

1. The beginning weight of the yearling is 650 pounds;
2. The finished weight is 925 pounds;
3. Average daily gain is 2.3 pounds which results in a feeding period of 120 days and makes it possible to turn over the feedlot capacity three times a year; and
4. The finished animal will grade US Good.

Table 7 shows the estimated feed consumption on the basis of these assumptions. This level of production, as shown in the table, will consume approximately half of the saleable hay produced on the Fallon Reservation.

In order to accommodate all Nevada Indian cattle, should they become available for feeding, and to take advantage of opportunities at certain times to buy drouth-stressed or bargain-priced feeders, it may be necessary to provide for local pasturing to hold cattle until pen space becomes available

TABLE 7. FEED CONSUMPTION AT VARIOUS LEVELS

Measure (Average)	Consumption	
	Alfalfa	Concentrates
Per Animal Per Day (Pounds)	7.5	11.25
Per 2,000 Head Per Day (Tons)	7.5	11.25
Per 2,000 Head per 120-Day Feeding Period (Tons)	900	1350
Per 6,000 Head Annually (Tons)	2700	4050

in the lot. Such grazing areas are available immediately adjacent to the proposed feedlot site. These areas can be leased for green grazing during the summer and as an area to hold surplus cattle during the winter months until pen space is available. Leasing on the reservation is regulated by the Bureau of Indian Affairs and leasing fees currently range from $5 to $25 per acre per year, depending on the quality of the pasture. It may be necessary to fence some of these areas but the cost would become part of the lease agreement. Water would have to be brought to these areas but the cost will be small. It will be important at times to have this supplemental pasture available in order to insure a controlled in-flow of cattle to maintain feedlot capacity throughout the year.

B. Marketing Finished Cattle

The cattle from the proposed feedlot should be sold on the open market for slaughter cattle as are the majority of the market weight cattle in the United States. The market for slaughter cattle is one that is characterized as having several buyers in any one location competing for the cattle available from the feedlots. Similarly, all feedlots are competing in the sale of their cattle. This competitive atmosphere is not likely to result in a premium for the cattle of any one feedlot unless a reputation for high quality has been established. The feedlot will provide a sufficient volume of finished cattle to attract both local and California packer-buyers and stimulate competitive bidding. Competitive bidding is what "makes the market". To the extent that Indian cattlemen feed out their yearlings in a cooperative feedlot, they will be creating an organized marketing effort. The feedlot manager will provide valuable professional marketing expertise needed to obtain the best competitive prices possible for Indian-produced cattle.

X. ECONOMICS OF FEEDLOT OPERATION

A. Capital Investment

Detailed studies of feedlot investment requirements show that investment per head of capacity decreases as the size of the feedlot increases up to about 20,000 head. Feedlots of 15,000 to 20,000 head capacity can be built for a cost per head capacity 50 to 60 percent lower than the cost of building a lot of 2,200 head capacity. However, even with feedlots of a given size, there is a wide variation in the manner in which a feedlot may be constructed and thus a wide variation in potential investment required.

In this study, on-site evaluation and specific cost information were combined with information from several very detailed feedlot studies (see Bibliography) to determine total capital requirements. The estimated capital investment required and annual depreciation of this investment are summarized in Table 8.

On the Fallon Reservation site, some land shaping will be required to remove knolls and contour the area downslope from the feedlot. The estimate for installation of the water system takes into account extension of the water main on the reservation and allows for water storage at the feedlot. Pens, bunks, gates, and related installations are estimated to cost $85,000. Several construction options exist but a concrete apron and feed bunk are considered a necessity.

The feed storage-processing-distribution system presents the greatest number of options. The basic requirements are storage for grain and supplement, a grinder(s) with capability for hay and grain, and a self-unloading feed wagon or truck. A complete feed mill system for a 5,000 to 10,000 head capacity lot was estimated to cost $195,000 installed, excluding grain storage. However, a 2,200 head feedlot does not warrant a detailed feed mill design and engineering expense or a unit this large. Good used equipment is presently available and an experienced feedlot manager could assemble the components of the feed handling system to match the initial size or growth potential of the feedlot. It is estimated that $120,000 is adequate to cover the required investment in feed storage, feed processing equipment, and feeding equipment.

The cost of electrical installation at the Fallon site is estimated at $10,000. The cost quoted by the power company was $2 per foot with a credit of 120 ($240) per permanently installed electrical horsepower. The nearest three-phase electrical power is about 2.1 miles from the proposed feedlot site.

It is suggested that one of the regular employees be housed at the

TABLE 8. 2,200 HEAD FEEDLOT INVESTMENT COST AND ANNUAL DEPRECIATION[a/]

Item	Total Cost	Cost Per Head Capacity	Expected Useful Life	Annual Depreciation[b/]
			(years)	
Site Preparation	$ 3,000	$ 1.36	15	$ 180
Water System	8,000	3.63	15	480
Pens & Equipment	85,000	38.63	15	5,100
Feed Storage, Processing, & Feeding Equipment	120,000	54.55	10	10,800
Platform Scale	11,000	5.00	10	990
Tractors (2)	20,000	9.09	10	1,800
Loader & Blade for Tractor	3,000	1.36	6	450
Trucks	10,000	4.55	6	1,500
Office & Equipment	6,000	2.73	15	360
Electrical Installation	10,000	4.55	15	600
Mobile Home	10,000	4.55	10	1,600
TOTAL	$286,000[c/]	$130.00		$22,860

a/ A list of suggested equipment is found in Appendix Table A-2.

b/ Based on a salvage value of 10 percent and depreciable value divided by expected years of useful life.

c/ Because of the need to have the manager on site during construction, the manager's salary of $18,000 and incidental expenses of $2,400 must be added to investment, resulting in a total capital requirement before operation of $306,400 (see Table A-5).

feedlot site. An investment cost of $10,000 is included for a mobile home.

The total investment required is estimated at $286,000 or $130 per head capacity. By comparison, feedlots in the 10,000 to 30,000 head range were built for $70 per head capacity two years ago. In 1974 and early 1975, feedlots under financial stress have sold for a fraction of replacement cost. Feedlots with a capacity of 10,000 head or larger and built in the late 1960's have recently been sold for or offered at $30 to $50 per head capacity. Feedlots less than four years old have been sold for or offered at a price of $45 to $60 per head capacity or even less.

B. Non-Feed Costs

Non-feed operating costs total $23.61 per head when the lot is operated at 90 percent capacity. At 60 percent and 30 percent of capacity, operating costs are estimated to be $26.25 and $36.61 respectively (see Table 9). The labor and management categories of operating costs account for substantial declines in unit cost as a larger share of feedlot capacity is utilized. Per head costs decline as a larger percentage of capacity is utilized in all categories except veterinary expense, interest on operating capital, and nutritional consulting expense.

The depreciation of capital represents an annual fixed cost of $22,860. This is a cost per head of $3.85 if the lot is used at 90 percent of capacity (5,940 head annually). The per head cost increases when the facility is operated at less than 90 percent of capacity. At a use rate of only 30 percent, the depreciation charge per head would be $11.55. A charge for interest on fixed capital might appropriately be included here. However, interest or return on investment is calculated later under alternative management situations.

C. Feed Costs

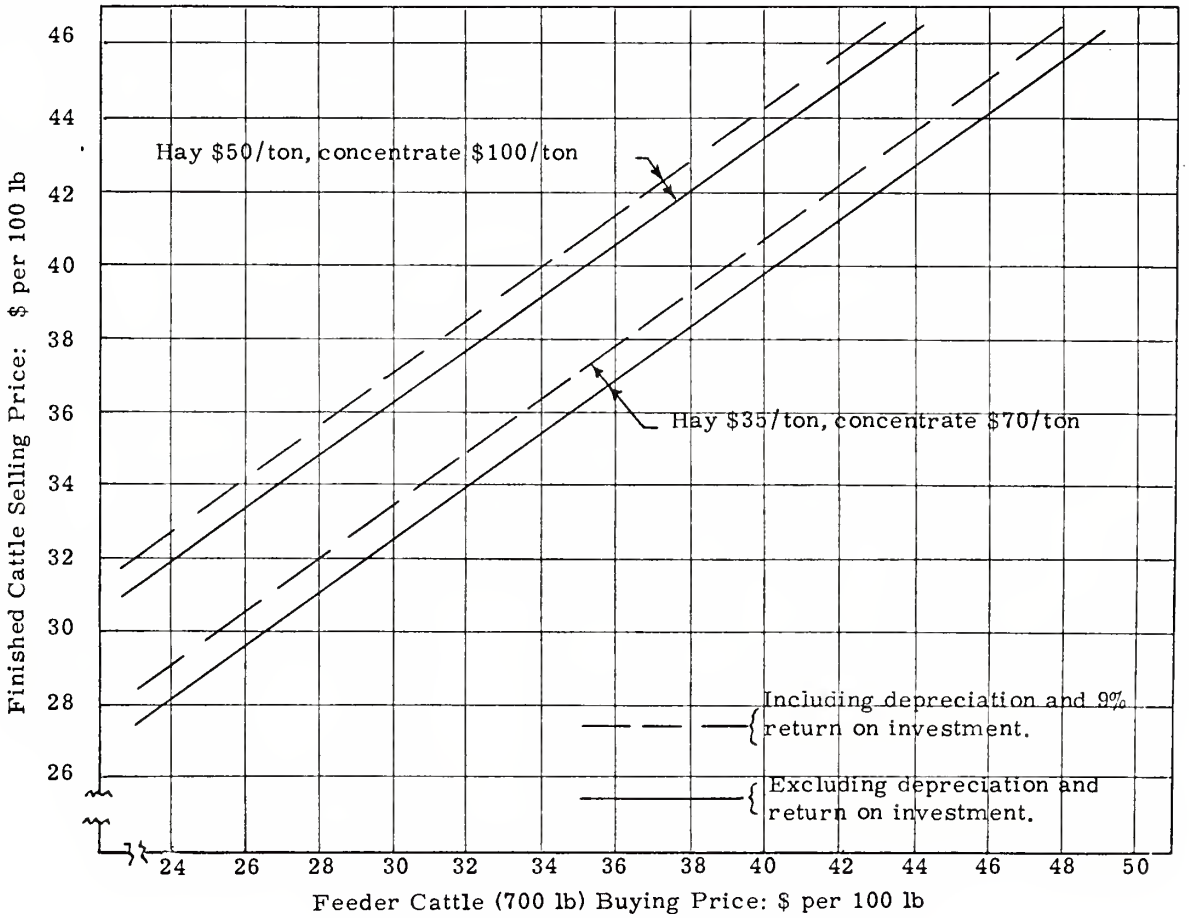
The cost of feed is of critical importance to feedlot profitability. Currently there is substantial uncertainty in the expected prices of feedstuffs. Prices are declining from their highs of 1974 as the demand for grains and other feedstuffs decline in response to unprofitable feeding situations. Yet, no feed surpluses exist, export demand is strong, and the size of future crops is a matter of conjecture at this time.

Feed costs, feeding efficiency, and non-feed costs are required to compute what a feedlot can afford to pay for feeder cattle based on expected slaughter cattle prices. This is demonstrated in Figure 6 for two levels of feed prices and the approximate feed requirements stated earlier in this report.

TABLE 9. NON FEED COSTS FOR 2,200 HEAD CAPACITY FEEDLOT FEEDING THREE GROUPS OF CATTLE YEARLY

Item	30 Percent Capacity (1980 head)		60 Percent Capacity (3960 head)		90 Percent Capacity (5940 head)	
	Total	Per Head	Total	Per Head	Total	Per Head
Manager's Salary	$18,000	$ 9.09	$18,000	$ 4.55	$18,000	$ 3.03
Bookkeeping Service	3,000	1.52	3,000	0.76	3,000	0.51
Labor	14,400	7.27	14,400	3.63	19,800	3.33
Utilities	4,158	2.10	7,920	2.00	11,286	1.90
Fuel and Oil	6,831	3.45	13,266	3.35	19,305	3.25
Veterinary and Medicine	3,960	2.00	7,920	2.00	11,880	2.00
Repair and Maintenance	3,250	1.64	4,050	1.02	5,100	0.86
Office Expenses	900	0.45	900	0.23	900	0.15
Insurance	2,160	1.09	2,820	0.71	3,480	0.58
Consulting and Miscellaneous	990	0.50	1,980	0.50	2,970	0.50
Interest on Operating Capital	14,850	7.50	29,700	7.50	44,550	7.50
Direct Operating Costs	72,499	$36.61	103,956	$26.25	140,271	$23.61

FIGURE 6. BREAK EVEN BUYING AND SELLING PRICES FOR CATTLE
At selected prices for feedstuffs, and the feedlot operating at 90 percent of capacity



D. Evaluation of Profitability

To test the economic viability of the proposed feedlot is equivalent to projecting the average return above feed cost. Historic information of this type is not available for areas other than certain Corn Belt states. This information is not generally applicable to Nevada where feed conversion is somewhat better but the markets for feeder and finished stock are determined by somewhat different supply and demand factors.

The most direct approach to identifying the economic viability of the proposed feedlot is to compare the estimated non-feed costs with the usual charges for custom feeding of cattle. Feedlots which feed cattle on a custom basis charge for feed and services rendered. These charges are indicative of the average returns to the feedlot under feedlot ownership of cattle since the feedlot management has the alternative of feeding his own cattle or feeding cattle for others.

Several types of charges for custom feeding exist and are determined to some extent by mutual agreement. A common type is the feed mark-up system. This includes a basic mark-up on the cost of feed that is fed plus a charge to cover veterinary expense and certain receiving costs. A major corporation with feedlots throughout Texas and Arizona had a basic feed mark-up of $12.50 per ton of feed in 1973 and a processing fee to cover medication and receiving of $3.50 to $5.40 per head.

For this analysis $14 per ton is used to partially account for rising costs. With present underutilization of feedlot capacity, it is unlikely that the full increase in costs of the past two years will be passed on to feeders having cattle custom fed. Based on the feed requirements set out earlier, the estimated feed required per head would be 2,250 pounds (1.125 ton) and the mark-up per animal fed would be $15.75. Adding a medication and receiving cost of $5 per head brings the total gross return (to the feedlot) per head of $20.75.

However, under a custom feeding program, the feedlot owner does not bear the cost of interest on the investment in the feeder animal. A lot feeding its own cattle would expect to recover this amount, which is approximately $5.25 (9 percent on $175 for four months). Thus, the equivalent gross return for a feedlot feeding its own cattle would be $26 ($20.75 plus $5.25). Table 10 shows a summary of the returns to the feedlot when operating at various levels of capacity. These are estimates of expected returns to a well-managed feedlot operating with either feedlot-owned cattle or performing custom feeding functions.

Under the cost and return analysis presented, the return on investment is negative. Three factors, discussed earlier, are largely responsible for this negative return: rapidly rising construction costs, relatively

TABLE 10. SUMMARY OF ANNUAL FEEDLOT OPERATING COSTS, RETURNS, AND CASH FLOW AT VARIOUS LEVELS OF CAPACITY

	Total Feedlot			Per Head Fed		
	30 Percent Capacity (1,980 Head)	60 Percent Capacity (3,960 Head)	90 Percent Capacity (5,940 Head)	30 Percent Capacity (1,980 Head)	60 Percent Capacity (3,960 Head)	90 Percent Capacity (5,940 Head)
OPERATING SUMMARY						
Direct Operating Costs a/	$72,499	$103,956	$140,271	36.61	26.25	23.61
Depreciation	22,860	22,860	22,860	11.55	5.77	3.85
Total Costs	95,359	126,816	163,131	48.16	32.02	27.46
Gross Returns Over Feed Costs b/	51,480	102,960	154,440	26.00	26.00	26.00
Net Margins (Gross Returns Over Feed Costs minus Total Costs)	(43,879)	(23,856)	(8,691)	(22.16)	(6.02)	(1.46)
CASH FLOW SUMMARY						
Net Margin	(43,879)	(22,856)	(8,691)			
Depreciation	22,860	22,860	22,860			
Cash Available for Debt Servicing	(21,019)	(996)	14,169			

a/ No allowance for interest required (if any) on feedlot debt. (See Table 9.)

b/ Feed costs, feed or cattle prices, and slaughter cattle prices vary substantially. To simplify the analysis, it is assumed that prevailing feed prices and purchase and sale prices of cattle vary together, on the average, to result in the average gross margin shown. The calculation is demonstrated in the foregoing text.

high per head construction costs for a modest size feedlot, and current industry-wide feedlot capacity substantially in excess of that required. The latter factor tends to hold down margins in the feeding industry. Because feed costs are expected to remain high relative to the past, the latter situation is expected to persist, resulting in severe competition in the cattle feeding business. Efficient feedlots with low investment per head (some as a result of recent distressed sales and recapitalization) will be in the best position to make profits.

Rate of return on investment is quite sensitive to variations in both feed and non-feed costs (Table 11). If feed costs five percent lower than the average can be obtained, rate of return increases to 6.3 percent. Five percent higher feed costs result in a negative return. The results for non-feed costs (excluding depreciation) are similar but less dramatic.

E. Working Capital Requirement

While returns over feed costs are expected to be about equal to custom feeding or feedlot-owned cattle, on the average there is an important difference in financial requirements. With a custom feeding operation, operating capital would be no more than required for feed and non-feed operating costs. Since it would be wise to buy the yearly hay supply at harvest, the working capital required would vary from a high of about $252,000 to a low of about $122,000. A summary of maximum working capital required is as follows for a lot that did not own the cattle:

Maximum hay inventory-2,700 tons @ $80	$216,000
Concentrates (inventory & fed) - 90-day supply, 675 tons @ $130	87,750
Direct operating expenses	50,000
	$353,750

When feeding cattle owned by the feedlot, the basic working capital requirement increases by $300,000 to $420,000 depending on the price of feeder cattle. In addition, a substantial cash reserve or line of credit would be necessary to cover losses from feeding that occur periodically in the best-managed feedlots. This reserve should total $50,000 to $100,000. Thus, total operating capital required to operate a feedlot with feedlot-owned cattle would be approximately $850,000.

F. Long Run Projections

The foregoing analysis indicates that this venture would have no chance of repaying a conventional loan. The sum of depreciation and return on investment would not service a loan at current interest rates. However, if this facility were to be built with an economic development grant, the operation

TABLE 11. ESTIMATED RETURNS ON INVESTMENT UNDER DIFFERENT LEVELS OF FEED AND NON-FEED COSTS FOR FEEDLOT OPERATING AT 90 PERCENT OF CAPACITY

	Change in Direct Operating Cost	Change in Feed Cost	Net Margin	Rate of Return on Investment
	---------- dollars----------			(%)
Average Costs[a/]	--	--	(8,691)	-3.0
Average Feed Cost				
10% Lower Direct Operating Costs	-14,027	--	5,336	1.9
10% Higher Direct Operating Costs	+14,027	--	(27,718)	-7.9
Average Non-Feed Costs				
5% Lower Feed Costs[b/]	--	-36,750	28,059	9.8
5% Higher Feed Costs[b/]	--	+36,750	(45,441)	-15.8

a/ From Tables 9 and 10.

b/ The percent variation in feed cost was based on a hay cost of $80 per ton and concentrate cost of $130 per ton and the feed requirement specified in Table 7.

could, with above average management, keep the initial capital intact and be financially able to replace the facility at the end of its useful life or expand at some time in the future. This would be accomplished by placing an amount equal to annual depreciation into a capital account. Return on investment (after allowance for depreciation) could also be placed in the capital account. An alternative would be to return this amount to feedlot patrons as a patronage refund. The accumulation in a capital account is shown in Table 12.

TABLE 12. ACCUMULATION IN A CAPITAL ACCOUNT FOR 15 YEARS

Year	Capital Account Deposits[a/]	Outlay for Replacement[b/]	Accumulated Value of Account[b/]
1	$22,860	--	$ 22,860
2	22,860	--	47,320
3	22,860	--	73,494
4	22,860	--	101,476
5	22,860	--	131,445
6	22,860	$ 4,020	159,497
7	22,860	--	193,522
8	22,860	--	229,928
9	22,860	--	268,883
10	22,860	262,269	48,295
11	22,860	--	74,536
12	22,860	--	102,614
13	22,860	--	132,657
14	22,860	--	164,803
15	22,860	--	199,199

a/ Equivalent to annual depreciation.

b/ Outlays at end of useful life (from Table 8) are inflated at the rate of 5 percent per year. Capital account is assumed to earn interest at the rate of 7 percent per year.

G. Financing

Financing for a project of this kind would not be considered by any type of conventional lender since it has no ability to generate adequate cash to service a debt. If the project was viewed as essential to further development of the Indian cattle industry, a grant for the facility, additional start-up costs, and some initial working capital would be required. Sources of grants for projects with such a relatively poor financial outlook are unknown.

H. Transportation

A feedlot requires the service of several types of transportation. Each type is somewhat specialized with respect to equipment required and the source and destination of the freight. Grain, by-product feeds, commercial feeds, and molasses will generally be bought on a delivered basis with shipping done by the seller or a commercial carrier. A truck with a 14-foot grain box and stock rack is a convenient and necessary part of the equipment for a feedlot of this size but it is not a large enough unit for major transport tasks.

Shipping feeder cattle in and market cattle out constitutes the major single category of specialized trucking. Based on commercial trucking tariffs and assuming the feeder cattle are shipped into the feedlot from each reservation and are shipped out to a west central Nevada packing plant, the total commercial trucking bill would be $38,104 (see Appendix Table A-4).

For the feedlot to own a cattle trailer, lease a diesel truck, cover all operating costs, and transport all of their own feeder and slaughter cattle, the annual costs would be approximately $38,674 (see Table 13).

While it appears that commercial trucking would cost only slightly less than a feedlot-operated truck, there are several reasons why it is impractical for a feedlot to operate trucks.

1. Cattle from ranches or reservations are frequently corraled for shipment in large groups requiring several trucks to accommodate the total number of cattle. Therefore, the feedlot-owned truck could not physically move all of the reservation cattle and extra expense would be incurred to hire additional trucks.

2. Opportunities to backhaul freight to reservations from the Fallon area have been explored and found to be nearly nonexistent.

3. A trailer suitable for hauling cattle is not suitable for hauling either grain or other feedstuffs. Thus, it is difficult to get other use from the truck investment.

TABLE 13. ESTIMATED ANNUAL COST FOR OPERATING A DIESEL TRUCK AND 40-FOOT CATTLE TRAILER

Item	Cost Per Unit	Annual Cost
1. Lease (diesel tractor)		
Monthly	998.00	11,976
Mileage Charge	0.094/mile(55810)[a/]	5,246
2. Insurance		4,000
3. Fuel	0.10/mile	5,581
4. Driver	0.15/mile	8,371
5. Cattle Trailer (40-foot double deck)		
Interest (10% of new cost)		1,400
Depreciation (10% of new cost)		1,400
Repair and Maintenance		700
Total Annual Cost		$ 38,674

a/ See Table A-4.

4. Servicing for the diesel truck would be at some point away from the reservation requiring additional time and expense.

Commercial feedlots rarely undertake to provide their own trucking services. There is no special reason why an Indian-owned lot should undertake this task. The need for trucking services by the feedlot is sporadic and the types of services are somewhat specialized (transport hay, grain, cattle). Thus, truck operation is generally limited to convenience transportation. The fact that other feedlots have determined that commercial trucking is more practical than feedlot truck operation supports the analysis made here. A few Indian-owned trucking businesses are in operation in Nevada and these should be supported with feedlot business where practical.

The transport of hay from the nearby Fallon Reservation to the feedlot can be accomplished by either feedlot employees or Indian hay producers. This can be accomplished with wagons, farm trucks, a flatbed truck-trailer or a three-ton truck with a "stack retriever". The latter would cost about $13,000 and would replace considerable labor in handling the hay. In view of the interest in maintaining Indian employment, the purchase of this type of unit may not be advisable.

XI. RELATED BUSINESS ACTIVITIES

A. Current Indian Enterprises

During the reservation survey, several other Indian enterprises were encountered that relate, at least in part, to the idea of vertical integration in the beef industry.

On the Walker River Reservation, one young enterprising Indian has established a small meat cutting shop and locker plant. He has had formal training in meat cutting and several years experience at the meat packing plant where he now has his cattle slaughtered. A fixed fee per head is charged to slaughter the animal and the packer keeps everything except the carcass, heart, and liver. This shop now cuts up and packages an average of four head of cattle a week and looks forward to moderate growth in the business. To suggest that there is an opportunity to vertically integrate into meat packing at this point, before the proposed cattle feeding enterprise has proven successful or has even been initiated, would be presumptuous. Furthermore, the size of feeding enterprise considered in this study is but a fraction of the volume needed to operate an economic-sized packing plant. This is not to say that such an enterprise should not be considered but rather that any attempt at vertical integration should be taken a step at a time. The feasibility of such an enterprise must be examined in-depth but only after cattle feeding has proven successful.

A steel fabrication enterprise observed on the Goshute Reservation has become quite successful under new management by a Salt Lake City firm. The enterprise manufactures cattle guards but can fabricate other items such as truck stock racks and gates. This enterprise may be able to supply several items and structures needed in construction of the feedlot. The company currently does its own shipping with a leased truck which costs approximately $1,000 per month plus 9.4 cents per mile, 15.5 cents per mile for the driver and 10 cents per mile for fuel. It was learned that present shipping volume could justify another "half truck". The trucking requirements for a feedlot of the size proposed in this study are not sufficient to justify ownership or leasing of a truck by itself. If the cooperative feeding enterprise is implemented, a cooperative trucking arrangement should be discussed with this company for delivering yearlings to the feedlot, shipment of fat cattle, and shipment of hay. It may also be possible to arrange backhauls of grain for the feedlot.

The Native American Construction Company is located on the Fallon Reservation. Although the firm deals principally in housing construction, it may be able to provide for some of the construction needs of the feedlot--such as land shaping and construction of fences, pens, feed troughs, aprons, water system, roads, sheds, and offices.

Two other Indian enterprises may be able to assist in construction of the feedlot and provide shipping services. These are another small construction company and a trucking firm that hauls hay to California.

B. Vertical Integration

The vertical integration of the meat business from ranching through retail distribution presents complications and difficulties of considerable magnitude. Beyond the production of the feeder animal are the functions of financing, assuming risk, handling, shipping, fattening in the feedlot, shipping to market, slaughter, by-product utilization, shipment of carcass, and finally wholesaling, meat cutting, packaging, and retail selling.

All of these are separate and distinct functions employing highly specialized management and working personnel, together with enormous fixed investment and working capital. In the existing economic scheme of things, numerous ranchers and farms are required to supply the animal and feedstuff needs of only one feedlot. Likewise, numerous feedlots are required to supply the needs of one minimum-sized packing house.

After this pyramid effect of many units in supplying the needs of fewer but large and highly specialized units, the system reverses itself. One packing house can supply numerous beef retail outlets. It should be understood, however, that most meat retailing is not in small butcher shops but in massive supermarkets - where thousands of items from pre-cooked rice to canvas shoes are sold.

In the past several months, an increasing number of small meat markets have been established by cattle feeders and ranchers in an attempt to capture part of the meat marketing margin. Most of these emphasize the sale of beef quarters or wholesale quantity beef packs. Several cattle feeders have claimed to reduce their losses from cattle feeding by this type of marketing. An operation of this type has been identified which slaughters, packages, and retails the beef from about 48 steers per week and employs about six people. It would take at least two such shops to direct-sell all the Indian-owned beef from a feedlot. Thus, this type of enterprise is substantially more labor intensive than cattle feeding. However, such an operation requires quality beef, good locations in population centers, and an entrepreneurial flair for merchandising in order to obtain prices high enough for profitable operation.

Several Indian enterprises that could be part of a vertically coordinated Indian beef industry are already in existence and may offer beneficial services for the proposed feedlot. However, it must be recognized that the feedlot is designed to accept ALL yearlings produced in Nevada by Indians. As stated above, packing and related operations require the cattle

from several feedlots this size. Taking into account this factor as well as the capital requirements, risks, management and marketing expertise required to integrate beyond the proposed feedlot, it would be unwise to consider further integration at this time.

XII. ALTERNATIVES

As cited earlier in this report, industry-wide feedlot capacity is presently greater than the demand for feedlot space. The purchase of a lot for this venture should be explored. However, no lots were known to be for sale in a size and location suitable for Indian operation at the time the field work for this study was underway. A larger feedlot would tend to have reduced operating costs per head if operated at capacity, but the capital and management requirements would be of a scope substantially greater than itemized here.

A co-op or group of Indian ranchers should consider assembling a uniform group of feeder cattle to be custom fed in a commercial feedlot. Several of the functions that would be needed for their own feedlot would be necessary for such an interim enterprise. A cooperative that would engage in such an operation would undertake to group the cattle according to size and grade, arrange for co-op ownership during the feeding period, arrange financing, and arrange for the sale of cattle. The experience gained would be valuable and Indian cattlemen could compare the feedlot performance and saleability of their cattle with other cattle that were fed under identical circumstances. However, no Indian labor or training would be involved in this type of activity. There would be no direct use of Indian feedstuffs. Thus, it has little long-run potential for development.

Over the years, Indian groups have been funded for a variety of projects, many of which were not successful and many of which were not closely related to Indian tradition and resources. It is expected that the federal government will continue to extend funding to Indian groups. There is considerable merit in funding projects closely related to the areas of activity familiar to the Indian; land and livestock. The feedlot is such a project. Development in the past has frequently come at a high cost. The possibility of losses in the feedlot operation should be evaluated in view of the less tangible gains that may be obtained from the various tribes working together on this type of project.

APPENDIX A

SUPPORTIVE DATA

TABLE A-1. DATA PROCEDURE FOR DETERMINING THE REPLACEMENT OF COW-CALF UNITS BY COW-YEARLING UNITS

Reservation	(A) Current Calf Production[a/]	(B) Cows Per Calf[b/]	(C) Cows Required For Current Calf Production[c/]	(D) Cow-Calf to Cow-Yearling Conversion Factor[d/]	(E) Number of Yearlings To Replace Calves[e/]
	(head)		(head)		(head)
Goshute	150	1.58	237	2.20	108
Duckwater	360	1.56	562	2.18	258
South Fork	150	2.00	300	2.62	114
Duck Valley	3,201	1.33	4,257	1.95	2,183
Fort McDermit	540	1.85	1,000	2.47	406
Moapa	---	---	---	---	---
Pyramid Lake	585	2.04	1,193	2.66	448
Walker River	944	2.00	1,918	2.62	732
Yomba	275	1.66	457	2.22	205
Fallon	340	1.56	530	2.18	243
Yerington	---	---	---	---	---

NOTE: The appropriateness of the procedure and figures used in Table A-1 to compute equivalent range and feed requirements can be demonstrated by comparing the present number of animal feed units with those after the adjustment to yearlings. An example of how this works out on the Duckwater Reservation is given here.

The current calf sales on the Duckwater Reservation require that 562 cows be maintained (with 64 percent calf crop). The feed required for this cow-calf production can be expressed as 562 animal feed units. Carrying a calf the extra year to yearling age and weight requires 5/8 or .62 of the range and feed of a cow and calf. The estimated 258 yearlings that can be raised instead of calves use 160 animal units (258 x .62 = 160) for the year on range after weaning. The calving percentage is 64; therefore, 1.56 cows are required per calf. Thus, 258 yearlings will require 402 cows and 402 animal feed units under the present level of efficiency. The total animal units of feed required is the same as before the change (402 used by cows plus 160 used by yearlings).

a/ See Table 1.
b/ Based on calving percentage.
c/ Calf production times cows per calf.
d/ Column B plus .62 (a yearling requires 5/8 or .62 of the range and feed requirement of a cow-calf unit).
e/ Column C divided by Column D.

TABLE A-2. EQUIPMENT AND FACILITY REQUIREMENTS

A. Installation

1. Three-phase power line to site from reservation headquarters.

2. Water piped from nearest source (one-fourth mile).
Water storage--80,000 gallons or 5-day supply.
Road graded from nearest asphalt to site (one-half mile).

3. Land leveling and sloping for pens.

4. Open hay storage shed.

5. Office-scale house (600 square feet).

6. Scales (10 x 34 feet -- 20 tons) with sliding rack (can be used to weigh both cattle and medium-sized trucks).

7. Hay and grain grinder, with 50 foot drag.

8. Overhead cyclone (dust collector) for grinder.

9. Overhead grain storage with gravity flow to grinder and dump pit and auger.

10. Overhead ground grain storage with gravity flow to feed truck (while on scales).

11. Overhead storage for optional concentrate ingredients, with pit and auger.

12. Overhead molasses blender (from grinder to truck).

13. Molasses storage, underground (35-ton capacity), and piping and pump to blender.

14. Outdoor lighting for work area.

15. Water system

    Small flow-through heated waterers between each two pens, concrete apron, underground pipe.

16. Working corrals

    Squeeze chute, loading chute, two corrals for sorting.

17. Hospital pens

    Six small pens with water between, shade, and windbreak, small feed troughs.

18. Horse pens

    Four pens with shade, water, and feed trough.

19. Feed pens

    a. Physical capacity for 2,200 head, with actual functional capacity (some pens must be vacant for cleaning, repair, etc.) for 2,000 head. Allow 125 square feet per animal, 60 animals per pen.

    b. Fenceline concrete feed troughs, with six-foot apron.

    c. Fencing of used 3-inch steel pipe set in concrete, 10 feet apart, connected at top and midway by 3-inch pipe. Two strands of one-half inch used cable above and below midway pipe. Adjustable collars for feed trough cable.

    d. Gates 14 feet wide, 2 per pen, metal.

    e. Work alleys, 14 feet wide.

    f. Feeding alleys, 20 feet wide.

20. Roads

    Graded for drainage but no surfacing.

B. Rolling Stock

1. Harsh mixer truck.

2. Tractor, one front end loader, and one rear blade.

3. Large manure spreader.

4. Small tractor.

5. Bob-tail cattle and commodity truck.

6. Pick-up truck.

7. Standby feeding wagon.

8. Flatbed trailer (for hay).

C. Other

1. Horses -- four head, saddles, and other gear.

2. Shop equipment and tools.

3. Office equipment.

TABLE A-3. NEVADA STATE TRUCKING TARIFF, 45,000-Pound Average Load, Selected Distances

Miles	Cost Per Load
0 - 10	$ 50
10 - 15	54
40 - 50	88
70 - 80	121
110 - 120	167
150 - 160	208
170 - 180	225
200 - 220	265
260 - 280	303
300 - 325	333
330 - 350	358

TABLE A-4. COST AND DISTANCE DATA ASSOCIATED WITH SHIPPING YEARLING CATTLE TO A FEEDLOT AT FALLON AND MARKET WEIGHT CATTLE TO YERINGTON PACKING PLANT

Reservation	Estimated Mileage to Fallon[a/]	Cost Per Load[b/]	Loads of Cattle[c/]	Estimated Total Shipping Costs	Total Miles Traveled[d/]
Feeder Cattle					
Goshute	280	$303	1.5	$ 455	840
Duckwater	220	265	5	1,325	2,200
South Fork	340	358	6	2,148	4,080
Duck Valley	400	440	32	14,080	25,600
Fort McDermit	250	300	6	1,800	3,000
Moapa	450	490	0.5	245	450
Pyramid Lake	80	121	6.5	787	1,040
Walker River	50	88	9	792	900
Yomba	110	167	3	501	660
Fallon	10	50	5	250	100
Yerington	70	121	1	121	140
Subtotal				$22,504	39,010
Market Weight Cattle to Yerington	70	130	120	15,600	16,800
Total				$38,104	$55,810

a/ Approximate one way distance.
b/ Based on distance and Table A-3.
c/ From Table 2 (80 head per load).
d/ Total round trip.

TABLE A-7. FUND REQUIREMENTS BY MONTH DURING PROJECT START-UP

Activity	Month	Fund Requirements By Month (month) 1	2	3	4	5	6	7	8	9	10	11	12	Total
		(dollars)												
Hire Manager	1	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	18,000
Obtain Lease or Assignment of Rights from Fallon Co. Cooperative	1													
Develop Detailed Design of Feedlot	2-3		a/											
Site Preparation	4				3,000									3,000
Installation of Utilities	4				18,000									18,000
Construction	5-12						20,000		20,000		20,000		25,000	85,000
Purchase Equipment	9-11									11,000	120,000	49,000		180,000
Hire Labor	11											b/		
Arrange for Manure Hauling and Disposal	11													
Begin Operating	13													
Incidental Expenses	1-12	200	200	200	200	200	200	200	200	200	200	200	200	2,400
TOTALS		1,700	1,700	1,700	22,700	1,700	21,700	1,700	21,700	12,700	141,700	50,700	26,700	306,400

a/ Included in construction and equipment costs.

b/ No expense incurred until first operating month.

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